

ISIE News

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International Society for Industrial Ecology

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Service to Our Society - Letter from ISIE President

The word “society,” according to an on-line dictionary, has two definitions:

1. the aggregate of people living together in a more or less ordered community.
2. an organization or club formed for a particular purpose or activity.

Conventionally, the ISIE falls under the second definition. The purpose of our organization is “to promote the use of industrial ecology in research, education, policy, community development, and industrial practices.”

As Heinz Schandl encouraged during a Council meeting last year, it is important for the ISIE to operate like a 21st century organization. The term “club” seems very 19th century. On that note it is worth turning to the first definition of society. Members of the ISIE are not literally living together in the same location, but we are a global community – and we wrestle with issues of global concern. With proliferation of social media and other processes of globalization, we may well be engaging more with each other than with our local neighbours. Perhaps then the first definition has elements that are more apt for the ISIE today. As President of the Society the “more or less ordered” part of the first definition also strikes a reflective chord, but that is an aside.

My main purpose in this editorial is to communicate some opportunities by which members could give service to the ISIE. Before doing so, however, I would like to point readers to articles in this newsletter which give recognition to our recent award winners: Roland Clift, Reid Lifset and Ming Xu. All three are great examples of ISIE members who have gone an extra mile or more in contributing to the ISIE. Amongst his many exploits, Roland has the unique distinction of having served as President, Executive Director and co-Chair of a biennial ISIE conference. Reid works tirelessly as the Chief Editor of our journal, but his role in the ISIE is actually much deeper (explore the history of our Society and you’ll see what I mean). Ming is younger, but has already served as a Council member, President of the Student Chapter, and co-founder and first co-Chair of the Symposium on IE for Young Professionals. The ISIE can only succeed with its goals because of the service of folks like these.

There are currently several initiatives underway that provide opportunities for members to

contribute to activities of the ISIE. Two, in particular, are efforts to: i) engage with alumni of IE, or related, programs; and ii) encourage the development of more university programs in IE.

Under the first initiative, ISIE is looking to members who are interested in attending, hosting or preparing material for alumni events. The types of events envisioned could be lifelong learning workshops, policy dialogues, or pub crawls; we are open to ideas. The ISIE already has some momentum here: in December, I attended a small gathering in London, hosted by Kieren Myers of Sony Corporation entitled A Conversation on IE in Practice. Resulting from this meeting the ISIE is working to co-host a policy event on the Circular Economy in Brussels early this year. We are keen to host further events with organizations where IE practitioners are employed, as this can contribute to sustaining the Society. We are also considering to hold some form of instructional workshops where industry and academia can exchange on latest ideas in IE. Several European schools have expressed interest in participating. If you would like to take part, please contact Judy, Edgar or myself.

As a step to encouraging the development of programs in IE, we are keen for members of the Society to participate and present papers at educational conferences, such as those on sustainability and higher education or engineer education, etc. It would be useful, for example, for members to jointly write a conference paper comparing the structure, courses and learning outcomes of the approximately twenty programs in IE that exist worldwide.

Or, perhaps to take on mighty questions such as how does education in IE relate to education in Sustainability more broadly, or perhaps to Ecological Economics? To be blunt, any form of high quality scholarship that wrestles with educational aspect of IE will do. It is important for the long-term prospects of the Society that ISIE members engage in education.

There are, of course, lots of other IE activities going on this year. May 25-27 we have the inaugural ISIE America meeting in Bogota Colombia, hosted by Universidad de los Andes.

The 13th annual Industrial Symbiosis Research Symposium will be held at Devens Eco Industrial Park in Massachusetts from June 17-18. This is just prior to the Gordon Research Seminar (June 18-19) and Gordon Conference (June 19-24) at Stowe, Vermont. Then in September (28-30) we have the joint Socio-Economic Metabolism and ISIE Asia-Pacific conference at Nagoya University, Japan. This is possibly the busiest year ever for ISIE – thanks to the hard work and dedication of many members.

While on the topic of service to the ISIE, let me end by thanking out-going Council members: Julia Steinberger, Hung Suck Park and Ming Xu; and welcoming new members Stefanie Hellweg and Sybil Derrible. We are also grateful for the work of out-going Student Chapter President Tomer Fishman; and Section leaders Peter Lowitt and Heinz Schandl; and welcome Moana Simas, Guillaume Massard and Helga Weisz.

Borrowing from a more famous President Kennedy:

“Ask not what the ISIE can do for you, but what you can do for the ISIE.”

Chris Kennedy, Victoria, British Columbia, January 15, 2016

ISIE Update

Dear ISIE Members,

We are pleased to announce the results of the recent ISIE election that closed on December 21st. Thank you again to those that have served previously in these posts. We appreciate your service to the Society.

The election results are as follows:

Council:

- **Sybil Derrible, University of Illinois at Chicago, USA**
- **Stefanie Hellweg, Institute of Environmental Engineering, ETH Zurich, Switzerland**

Nominating Committee:

- **Timothy Baynes, CSIRO, Australia**
- **Jooyoung Park, Universidad de los Andes, Colombia**

Please join us in congratulating these new Council and Committee members!

ISIE Sections Update

Students discuss future agendas for industrial ecology in SIEYP 2015

Following a whole week of conferencing and "taking stock of industrial ecology" over 90 students and young professionals from 21 different countries closed the conference week by looking forward to the future of our field. Gathering in the University of Surrey one day after the ISIE biannual conference, we discussed future agendas for industrial ecology at the Symposium on Industrial Ecology for Young Professionals (SIEYP 2015), the fourth such symposium organized by and for the student community of ISIE.

The symposium opened with ISIE president Chris Kennedy (University of Toronto) and JIE editor in chief Reid Lifset (Yale University) addressing the past and future of the industrial ecology field as keynote speakers. Their talks were followed by a panel with Chris Davis (University of Groningen), Ming Xu (University of Michigan), Vered Blass (Tel Aviv University), Weslyne Ashton (Illinois Institute of Technology), and Megha Shenoy (independent consultant), who shared their experiences of transitioning from early career to becoming leaders in the field, as well as their opinions on future directions for industrial ecology.

For the rest of the day the students and young professionals split into teams, brainstorming to unveil future topics and challenges for industrial ecology on topics suggested and selected by the participants: big (and small) data; disciplinary boundaries; policy and communication; collaboration between industry and academia; global aspects; and future methods, models, and tools. The teams, working both indoors and outdoors, came up in just a few hours with pioneering forward-thinking agendas and ideas for industrial ecology. The teams then presented and deliberated their visions in a final open discussion.

The symposium was a unique opportunity for students and early career researchers to collaborate, network, and share their experiences. It brought the next generation of IE experts closer by formulating common visions and agendas. Realizing that this might be of interest to the wider IE community, the outcomes of the SIEYP are planned to be published as an editorial in the Journal of Industrial Ecology.

Before the official opening of the ISIE conference in Surrey 2015, there was a roundtable discussion about what Industrial ecology alumni do when they finished their educations. We were pleased to see that the topic gathered participants from different universities around Europe and from universities in Canada, Australia and from Taiwan.

In the roundtable meeting the preliminary results of an alumni survey was presented that had been conducted during the spring. The survey was coordinated from Chalmers University of technology by Maud Lanau, Anna Nyström Claesson and Henrikke Baumann (Department of Energy and Environment). The survey went out to around 500 Industrial Ecology alumni in the world but mainly in Europe.

The results pointed at that a large group of alumni remained in various research activities (about 30%), some were working in consultancy firms but relatively few in industry (figure 1). Other results show that Despite the fact that these alumni's' competence should be wanted in industry. At least according to think tanks such as the Aldergate group in the UK that states that a new type of engineers in industry are needed that masters systems thinking for sustainable development, communication and can take on the leadership of problem solving from a holistic perspective. This is puzzling.

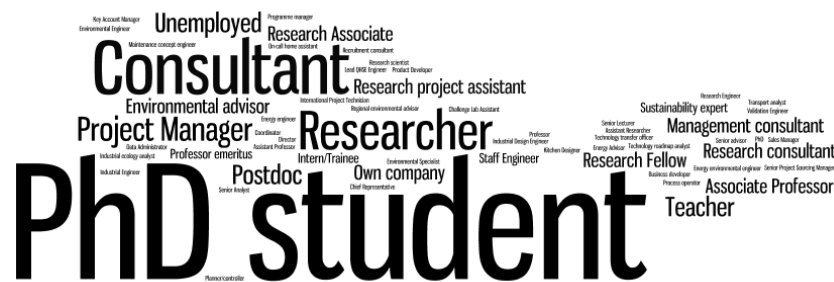


Figure1. Word cloud on the questionnaire respondents stated occupation

Other results from the survey indicate that the Industrial Ecology alumni is mainly a LCA practitioner, despite the number of different Industrial Ecology tools in the toolbox. The results also indicate that a relatively large group is not completely satisfied with their work and the limited amount of systems thinking in their everyday work life.

During the autumn 2015, we have looked for funding to further investigate why industry and Industrial ecology alumni don't find each other but unfortunately the outcome of the applications have been negative. However, we are continuing the work in different ways for example by sending an abstract to the conference for the Engineering Education for Sustainable Development (EESD16) in Belgium this autumn and also to take on master thesis student to help us further explore this miss-match.

The groups that met in Surrey intends to continue discussions on the link between IE educational programs and careers. If you are interested to take part in the discussion, drop a line to anna.nystrom.caesson@chalmers.se.

ISIE STUDENT COMMUNITY: What's up for the next year?

The elections for the ISIE Student Community (ISIE-SC) board happened in October and the new members, coming from four different continents, joined our already multinational team. New ideas discussed in this new board are now gaining shape. The work for the upcoming year has been divided in three fronts.

The first one focuses on Strategic Planning and aims at defining and clarifying the position of the ISIE Student Community in the ISIE, as well as its role towards the students. This includes revising the ISIE-SC bylaws and defining the activities the ISIE-SC will be responsible for. The second one deals with communication, in which the board will work on strengthening the 2-way communication with the students.

This should be done at both the international level, notably through social online networks, and at the local level, with the possible development of on-the-ground representation in different industrial ecology study programs. Improving the communication will be essential to improve the services and representation we provide to students.

Finally, the third taskforce handles events, and 2016 will be a year with a lot of interesting and exciting events! The ISIE-SC is organizing and supporting students' activities in the ISIE events happening all around the world: ISIE Americas Meeting in Bogota (Colombia) May 25-27; ISIE Gordon Research Conference and Seminar in Vermont (USA) June 18-24; and, the ISIE Socio-Economic Metabolism section and the 5th ISIE Asia-Pacific conferences in Nagoya (Japan) September 28-30.

For more information on the ISIE-SC, the new board, and our activities, visit our webpage at <http://is4ie.org/students>, or contact us at isiestudentchapter@gmail.com.

Alessio Miatto, Carla Caldeira, Eleonore Lebre, Felipe Vasquez, Ighes Contreiras, Maryam Arbabzadeh, and Moana Simas
The ISIE Student Community Board

Life Cycle Sustainability Assessment (LCSA) section announces Call for papers

ISIE - LCSA section has announced a Call for papers for a special issue of Journal of Industrial Ecology - Charting the Future of Life Cycle Sustainability Assessment in Industrial Ecology.

This special issue is designed to reinforce the pertinence of life cycle concept and industrial ecology to the latest thinking in sustainable development and intends to assess the contemporary research in the field of LCSA and charter its future course of development. Topics suggested for the special issue but not limited to LCSA framework, Social life cycle indicators, Integration of IE tools, scenario assessment, policy relevance of LCSA and experiences from allied communities.

Jeroen Guinée, Leiden University, the Netherlands, Thomas Gloria, Industrial Ecology Consultants, USA, Bhawna Singh, Norwegian University of Science & Technology (NTNU), Norway, and Harn Wei Kua, National University of Singapore will serve as guest editors.

Deadline for the submission of manuscripts is 15 March 2016.

Journal of Industrial Ecology News

Two new calls for papers for special issues and one submission deadline plus new editors and JIE articles attracting attention.

Calls for Papers for Special Issues

Charting the Future of Life Cycle Sustainability Assessment - Deadline: **15 March 2016**
For the full call for papers, see <http://jie.yale.edu/cfps/jie-cfp-LCSA>

Nearly a decade ago, the concept of life cycle sustainability analysis (LCSA) emerged and it has been widely discussed and debated ever since. Based on those experiences, this is a good time to assess the progress of LCSA and grapple with its continued development.

Some view LCSA as a broadening of environmental LCA (E-LCA) to also include economic (through life cycle costing; LCC) and social (through social LCA; S-LCA) impacts. Others

The expansion of E-LCA towards LCSA is a consistent and natural progression to the achievement of the overarching goal of assessing the relative sustainability of a system. In this light, three questions need to be addressed: First, what form should the integrated concept take in order to include technological innovation, economic valuation, and social systems? Second, what are the precise classifications of application? Traditionally, LCA has been successfully applied at the product level. Can LCSA be applied at the organizational level or the economy-wide level? If so, what are the rules for boundary definition? And, how do these different levels of applications relate? Third, international consensus has been achieved regarding the most important sustainability aspects to address through the UN's Sustainable Development Goals (SDGs). Is it possible for LCSA to adapt and adopt methods to quantify and measure progress toward sustainability?

Further, will this expansion of E-LCA to LCSA enhance our ability to apply life cycle thinking in the use of other industrial ecological tools and concepts, including industrial symbiosis and material flow analyses?

This special issue seeks answers to these questions as part of our concerted effort as a community to reinforce the pertinence of the life cycle concept and industrial ecology to the latest thinking in sustainable development.

[Jeroen Guinée](#), Leiden University, the Netherlands, [Thomas Gloria](#), Industrial Ecology Consultants, USA, [Bhawna Singh](#), Norwegian University of Science & Technology (NTNU), Norway, and [Harn Wei Kua](#), National University of Singapore will serve as co-editors of the special issue.

Exploring the Circular Economy - **Deadline: 15 February 2016**

For the full call for papers, please go to: <http://jie.yale.edu/cfps>

The circular economy is gaining increasing currency as a strategy in the pursuit of global sustainability. China enacted a law for the promotion of the circular economy in 2008, the Ellen MacArthur Foundation has played a pivotal role in engaging the business community, and the European Union is formulating a circular economy strategy as a socio-economically promising means to achieve resource efficiency.

The overlap between the circular economy and industrial ecology is extensive. To some they differ in name only, to others the concepts have only partial overlap, and to still others industrial ecology addresses the science whereas the circular economy focuses adoption and implementation. The enthusiasm for the popularity of the circular economy framework in the industrial ecology community varies widely.

As the circular economy concept gains traction and as iteration continues between vision and implementation, a wide variety of questions need careful exploration. In some arenas, the focus is on when and how circular economy approaches produce desirable environmental outcomes—and when they don't. In others, the interest lies in the further development of tools and strategies, e.g., how is circularity measured in businesses and economies? And in still others, the central concern is the diffusion and adoption of circular economy approaches by business, governments and society at large.

It is the ambition of this special issue to probe diverse dimensions of the concept, methodologies, performance and history (intellectual and practical) of the circular economy. This includes the examination of the environmental, economic, resource, engineering, managerial, design, and policy implications of the circular economy. Analysis can employ well known tools in industrial ecology including LCA, MFA, techno-economic analysis, and IO analysis as well approaches from other fields and disciplines such as social science, public policy, design, engineering and business. Detailed and well documented case studies are welcome especially if they speak to key questions related to the circular economy.

[Nancy Bocken](#), Delft University of Technology and University of Cambridge, [Jonathan Cullen](#), University of Cambridge, [Elsa Olivetti](#), Massachusetts Institute of Technology and [José Potting](#), PBL Netherlands Environmental Assessment Agency will serve as co-editors of the special issue.

Environmental Dimensions of Additive Manufacturing and 3D Printing - Deadline EXTENDED to: **29 February 2016**

For the full call for papers, please go to: http://jie.yale.edu/JIE-AM_CfP

In anticipation of funding from Office of Advanced Manufacturing of the US Department of Energy, the deadline for submissions for the special issue of the *JIE*, "**Environmental Dimensions of Additive Manufacturing and 3D Printing**" has been extended to **February 29, 2016**. Because of the potential funding from the Department of Energy and a grant from the Lounsbery Foundation, all papers in the issue will be published open access; the pending grant expands the number that can be included.

The JIE is pleased to welcome Mikhail Chester as an associate editor for LCA, urban infrastructure and transportation. He is an assistant professor of civil, environmental, and sustainable engineering at Arizona State University in the US. Klaus Hubacek, professor of geography at the University of Maryland, in the US will become an associate editor for input-output analysis replacing Sangwon Suh who is stepping down after long and valued service.

News about JIE Papers: Almonds & GHGs; Science-based Corporate Carbon Targets

Some recent JIE papers have generated attention. Alison Kendall and her colleagues at University of California Davis published a pair of papers on an LCA of almond production in California. Given the California drought and water intensity of almond production, these papers generated considerable attention and news coverage (for background, see <http://bit.ly/FES-JIE-almond>).

These articles prompted a project funded by the US Dept of Agriculture between the Almond Board of California, the Environmental Defense Fund (EDF) and other partners to give almond and corn growers greater access to GHG markets like those under California's cap-and-trade program. (See more at: http://bit.ly/Almond_LCA-USDA)

Mark Trexler and Auden Schendler critiqued the growing call for science-based corporate carbon targets (http://bit.ly/JIE_distract) and Gregg Marland (the JIE's columnist on carbon accounting), Tammy Kowalczyk, and Todd Cherry provided a lively reply (http://bit.ly/JIE_fluff).

Sign up for the JIE's table of contents service: <http://bit.ly/JIE-eToC>

Follow the JIE on Twitter: [@IndEcol](https://twitter.com/IndEcol)

IE News from around the world

CentraleSupélec (www.ecp.fr) has successfully launched in October 2015 the first edition of a new Advanced Master (*Mastère Spécialisé*) on Industrial Ecology. This training program is intended for professionals (mainly master degree with at least 3 years of experience), who wish to become experts in Industrial Ecology, able to develop and manage ambitious projects in their organization (companies, local or national authorities, NGOs...). This training is a part-time program with 65 days of campus-based teaching (5 consecutive days per month during 13 months) and 25 days of personal/collective work, associated with 4 to 6 months of industrial mission validated by a professional thesis. The program is delivered in French.

The second edition will start in October 2016. Applications are already open (selection based on application and interview)

This program leans on three complementary research entities:

- Laboratoire Génie Industriel (Industrial Engineering Laboratory, www.lgi.ecp.fr) of CentraleSupélec, working on modeling, simulating and optimizing complex industrial systems and activities;
- Laboratoire Génie des Procédés et Matériaux (Process and Materials Engineering Laboratory, www.lgpm.ecp.fr) of CentraleSupélec, working on simulating and optimizing bio-materials and bio-processes;
- Paris Saclay Energy Efficiency (PS2E, www.ps2e.com), working on energy efficiency and flexibility of urban and industrial areas and eco-industrial parks.

This program is also characterized by strong industrial partnerships. About one third of the teaching is performed by industrial experts, who are also providing numerous industrial case studies.

The training will be structured around 9 themes:

1. Context and stakes of Industrial Ecology
2. Environmental management
3. New industrial et territorial methods
4. Multi-actors project management
5. Energy efficiency
6. Economy
7. Law
8. Innovative problem solving methods
9. Industrial visits

For more information, please contact Dr. François Cluzel (educational manager, francois.cluzel@ecp.fr) or Pr. Bernard Yannou (scientific co-manager, bernard.yannou@ecp.fr), or consult our webpage (in French): <http://www.exed.centralesupelec.fr/fr/formation-continue/ei01-16-mastere-specialise-ecologie-industrielle>

- **Course A: LCA modelling of waste management systems**
- **Course B: LCA modelling of bioenergy technologies and systems**

Courses description

The course provides an introduction to LCA methodology as well as how to address the two types of systems. Focus is on providing the technical approach of modelling the various processes and technologies including the data structure and input to the model. The student will learn to set up scenarios (systems for comparison), acquiring data on processes as well as external processes (electricity, auxiliary materials, etc.). Performing the environmental assessment as well as the data interpretation are demonstrated several times during the course and also implemented by the participants using software installed on their own PCs.

Course A focuses on waste management technologies and systems, including waste generation, composition, source-segregation, collection, material recovery/recycling, bio-treatments (composting, digestion), landfilling, and thermal treatment.

Course B focuses on bioenergy technologies and systems, including biomass generation and composition, alternative biomass utilizations, land use changes, bioconversion technologies (digestion, fermentation, etc.), integrated biorefineries with multiple outputs, thermal conversions.

Both courses utilize the EASETECH LCA model developed at DTU Environment, and the software will be available for free for future use in their academic PhD work.

Practical info

Students can follow one or both courses, at their convenience. Topics common for both courses are taught together in the same class, while other topics and exercises are specific to the individual courses. The teaching, however, is organized so students can follow and pass both courses. Each course is worth 5 ECTS credits.

Both courses take place within the same two weeks, **June 13th - 24th 2016**, at the Technical University of Denmark, Lyngby, Denmark. There will be a course fee of € 150 covering refreshments, excursion, and a social dinner (same fee no matter if it is 1 or 2 courses). The course is open to PhD students, academics and professionals (for professionals there is a software license fee for commercial use of €5000).

Enrollment

Via mail to adam@env.dtu.dk (40 seats available), deadline March 15th, 2016.

Further details:

More info can be found at www.easetech.dk. I will also like to point to a course in USEtox run by one of our other DTU departments the week after <http://www.usetox.org/support/usetox-dtu-summer-school-2016>. Finally we teach a short course for industry and consultants in EASETECH on March 7-9th, 2016.

IELab Hub Open

The IELab Hub is the central platform around the Industrial Ecology Virtual Laboratory (IELab), a collaborative platform for multi-region input-output modelling and research. Flexible and scalable, IELab is designed to process and analyse economic, environmental and social data from any sector, country or region. It provides high-resolution, time series creation, automated updating, hybridisation and analytical tools.

Please register on <https://ielab.info/register> if you want to receive updates or take part in IELab discussions. Browse Projects and Publications or visit the IELab Conference 2015 page to view the program or download presentations.

Cities contribute 70% of global green house gas emissions (GHG). In the U.S., 40% of total energy use comes from buildings—electricity and natural gas— for heating and cooling. But how do building characteristics or socio-demographics influence energy use in buildings through a city? These questions are critical for developing improved energy efficiency programs and policies.

Los Angeles now has a public tool for analyzing high-resolution energy use data. The California Center for Sustainable Communities at UCLA, led by Dr. Stephanie Pincetl, has developed the *LA Energy Atlas*, an interactive data visualization platform for mapping aggregated account-level energy use data throughout L.A. County. The website is powered by a geospatial relational database that connects address level energy consumption to building characteristics and census information. All data is downloadable and complies to protect privacy. The Atlas has been highlighted by the Los Angeles Times and CityLab. The tool exemplifies the types of data-driven platforms that will be increasingly necessary to inform energy planning and research in Los Angeles and throughout California, as the state works to achieve its ambitious energy goals.

Members' News

Robert Laudise was one of the pioneering figures that helped launch industrial ecology in the early 1990s. Along with Tom Graedel, he worked at the storied AT&T Bell Labs where they developed an interest and passion in the environment. Robert Laudise was influential in convincing the AT&T Foundation to support the development of our field. That early support included funds for the US National Academy of Engineering colloquium that led in 1992 to the special section in the Proceedings of the National Academy of Sciences with 22 seminal articles on industrial ecology as well as the AT&T Industrial Ecology Faculty Fellowships that helped many key figures in our field. His role in industrial ecology is described [in a JIE article](#) and the AT&T Faculty Fellowships are described in [a companion article](#).

The Laudise family has generously been providing an annual donation in his memory to support the ISIE for many years. In response to a letter from Judy Crocker, the ISIE program coordinator, on the Surrey conference and other ISIE activities, his widow, Joyce Laudise sent the letter below:

December 20, 2015

Dear Judy,

Thank you for sending the 25th anniversary booklet of the ISIE. I enjoyed reading it. Industrial ecology has come a long way in 25 years thanks in no small measure to the ISIE. I also enjoyed hearing about the most current recipient of the Laudise Medal, Ming Xu.

We have known Tom Graedel for many years. It's exciting to know his pioneering efforts in industrial ecology are being recognized with the Graedel Prize.

My late husband, Bob Laudise, would be pleased to know young people in developing countries are being encouraged to study industrial ecology. Their interest and accomplishments in the field will help make our world the world it was meant to be.

I speak for myself and my family when I say we are happy to further global interest in industrial ecology by supporting the ISIE. Again, thank you for the update.

Sincerely,

Joyce Laudise

Roland Clift - Society Prize Recipient 2015

What makes a person win the Industrial Ecology Society Prize? Perseverance, dedication and a certain amount of stubbornness are preconditions. Next the person is to be attractive and sociable. And the person, 'she' would Roland say, is also to be broad, beyond the scientific domain, like speaking Latin and singing old-English songs. And some good sense of humor is useful as well, as showing in the title of a co-authored paper: Consider a spherical man. Well, Roland has it in him, all of it. But that is not enough to become a key person in industrial ecology. There are further attributes of strategy and of ethics, in combination giving direction to the development of the chosen field. What is important to society, and how to approach the key issues in what is important? There are academic, technical and broad economic and societal issues, to be integrated in a productive way.

Roland gave up a brilliant career in chemical engineering when founding the Centre for Environmental Strategy (CES) in Surrey, in 1992, at the time certainly not a high status domain. He gave direction to its long term development, and he still does, due to his personality and keen interest in novel development in the field. An example is his approach to the analysis of material stocks and their functionality. It combines the traditional tools of industrial ecology, LCA and MFA, but brings the subject to a broad societal level, as a development strategy. He also gave direction to development beyond Surrey, in the realm of politics, at the interface of academia and politics, and to academic developments abroad, all well before the Society of

Industrial Ecology was established as the carrier for such efforts. Roland has published, lectured, organized and made linkages like few others, travelling the world on a nearly monthly basis. His most recent contribution, after the Prize, is a book. It organizes other leaders in the field: Taking Stock of Industrial Ecology, edited with Angela Druckman (Springer 2015).

I have known Roland right from the start of CES. Several times he helped guide CML at Leiden University through difficult periods. And of course there are other more cheering moments to remember. We worked on a European project to reduce coating emissions, which included eating and drinking in Tuscany, singing English songs with him on the way back home. It does not bring you the Society Prize directly. But it counts.

Gjalt Huppes

Reid Lifset - Society Prize Recipient 2015

For those who have never visited, the Center for Industrial Ecology at Yale sits on the pinnacle of Science Hill (rightly so, we might argue, though the structure was moved there from a different location more than a decade ago). And in the penthouse of this building sits the person with perhaps the best global view of industrial ecology, a man who guides our entire community and a much-deserving co-recipient of this year's Society Prize: Reid Lifset.

If I could choose one word to describe Reid, it would be 'dedication'. I had the pleasure of sitting up on the third floor next to the JIE office for a couple of years, and it was a rare occasion when I would beat Reid to the office. And when it did happen, he would inform me that he'd already been up for hours before coming to the office, reading through the latest manuscripts to come into the editorial office! As editor-in-chief of the JIE for twenty years, since its founding, Reid has shepherded the journal to widespread recognition and impact. To paraphrase Mitch Small, then associate editor for Environmental Science & Technology, who remarked of environmental journals during a visit, "We have volume, but you have quality." And Reid pours his and the JIE's resources into cultivating and safeguarding that quality. It is a sure bet that all of us who have ever published with JIE have benefited from the editorial staff's close readings of our manuscripts, always with suggestions on how to make them clearer and more relevant to the field and to the world. Through editorials, special issues, and curated collections, Reid has pushed the journal into important intellectual territory, where he sees that industrial ecologists can have a leading role in establishing methods and discussing public policy, as with the series on biofuels and in his role as the Chair of the Gordon Conference in 2010.

A close runner-up descriptor for Reid might be 'generosity', for he is extraordinarily generous with his time and ideas, helping other researchers develop their work in his role as editor and as a colleague. Thanks for a shared afternoon coffee addiction, Reid would invite his floor-mates into his office most afternoons, where he would discuss the latest news and offer suggestions or point out new directions for us to consider. Naturally, waste management was a favorite topic, as evidenced by the toy garbage trucks and back issues of Biocycle magazine littering his office. And then it was 'back to the salt mine!', as Reid lovingly refers to his desk. I and countless others have benefited from his encouragement and insight.

Reid is also a formidable researcher in his own right. A graduate of MIT's program in Technology and Public Policy and a political science wonk, Reid has written dozens of articles on a wide range of industrial ecology topics, most notably in the area of Extended Producer Responsibility, on which he continues to be a leading voice in discussions all over the world.

As his Society Prize co-recipient Roland Clift once said, "I do believe that we would not have a 'field of industrial ecology' without Reid Lifset." Here's to a great editor and thinker and a fine friend.

Matt Eckelman

Ming Xu - Laudise Medal Recipient 2015

From the very start of his career Ming seemed to find a place at the vibrant, rapidly evolving, and ambitious frontier of industrial ecology. As a Masters student at Tsinghua University with Prof. Tianzhu Zhang he conducted the first economy-wide MFA for China. Then, advised by Brad Allenby at Arizona State University, he expanded the reach of his work with his doctoral dissertation "Sustainability and resilience of complex systems using network theory." This was followed by post-doctoral work with John Crittenden at Georgia Tech where, along with other work marrying complex systems theory and industrial ecology, he developed the concept of "infrastructure ecology" - part of an eloquent call for systems thinking to create interventions that match the scale of the great environmental challenges they address. As an assistant professor at University of Michigan he has continued to contribute and to define the leading edge of industrial ecology research -

He has also dedicated himself to building the industrial ecology community and its body of work - guest editing the Journal of Industrial Ecology special issue "Advances in Complex Adaptive Systems and Industrial Ecology," and serving as an associate editor and now Editor-in-Chief at Resources Conservation and Recycling, where I am now an Associate Editor at his invitation. Which brings me to a more personal observation: if that invitation had come from someone else, I likely would have demurred. But Ming's enthusiasm, optimism, and vision for our field is great motivation and inspiration, so my answer was an unreserved yes. It is not just me, my own graduate student returned from a conference last year where she seemed to find new enthusiasm and dedication to her work after meeting with Ming and his students. I have no doubt Ming will continue to motivate and inspire his peers and the next generation of industrial ecology scholars, and I look forward to meeting them in the coming years and decades.

Material efficiency gaining steam

"Our Sustainable Materials - with both eyes open" by Jonathan Cullen and Julian Allwood of Cambridge has been chosen by Bill Gates as one of his 6 top reads for 2015. He wrote up a detailed review article in his blog post: <http://www.gatesnotes.com/Books/Sustainable-Materials-With-Both-Eyes-Open>

The researchers also managed to get the concept of 'material efficiency' into the latest World Energy Outlook (WEO) report by the International Energy Agency (IEA), in a 15-page section called "Material Efficiency in Energy-Intensive Industries". They have been developing the concept of "material efficiency" over the last few years, and the inclusion of "material efficiency" as a strategy for mitigating climate change in the WEO, alongside the more traditional renewable and energy efficiency options, is a real success, and demonstrates the tangible policy impact of industrial ecology work. Fatih Birol, the Executive Director at IEA is quoted saying "The 2015 edition ... will for the first time look at how efficiency, product design, recycling and reuse can cut down on energy use." <http://www.politico.eu/article/iea-fatih-birol-opeccop21-energy-climate/>

Socioecological transitions, sustainability and collapse of island communities: the case of Samothraki

The Austrian National Science Fund rewarded Marina Fischer-Kowalski's ongoing efforts in achieving sustainability on the Greek island Samothraki by substantial funding. The project analyses society-environment relations on the Greek island of Samothraki. Over the past decades the island is experiencing a transition process from an agrarian to a modern society and a gradually rising imbalance from ecological overexploitation. The project gives scientific support to the process of turning Samothraki into a UNESCO Biosphere Reserve, by generating improved insights from past demographic collapses, and identifying the threats and possible ailments in order to avoid them for the present.

In July 2016, we collaborate in holding a summer school on Samothraki. Interested students need to apply by Jan. 20, 2016. See aau.at/sec and http://www.uni-klu.ac.at/socec/downloads/Summer_School_Samothraki_2016_Call_for_Participants_FINAL2.pdf and www.sustainable-samothraki.net.

Open Positions

Post-doctoral Fellow Opportunity in Sustainable Energy Policy

The School of Environment, Resources and Sustainability at the University of Waterloo is seeking a post-doctoral fellow (PDF) in the area of sustainable energy policy. The position will commence as soon as possible (and no later than 1 June 2016) for an 18-month period. The annual salary will be \$50,000 plus benefits.

The PDF will investigate the social acceptance of energy storage technologies. More specifically, the PDF will complete two major investigations: (i) a systematic review of the relevant literature; and (ii) an evaluation of methods used to understand communities' engagement with transformative energy technologies. Additionally, the PDF will develop an inventory of Canadian activity on energy storage. The PDF's activities will contribute to the work of the Sustainable Energy Policy Group at the University of Waterloo and to the work of a national collaboration on energy storage technologies. A modest level of resources to assist with the execution of collaborative work will be available. The PDF will be expected to be in residence at the University of Waterloo.

The PDF will be a recent (or soon-to-be) PhD graduate in an area relevant to sustainable energy policy. The PDF will also possess the following: an internationally-recognized research capability, an emerging publication record, demonstrated interest in

interdisciplinary research, outstanding communication skills (written and verbal), evidence of initiative and advanced organizational skills, and successful experiences within a collaborative research environment.

To apply, individuals are asked to send a cover letter, a CV/resume, the names of three referees who may be contacted to discuss the applicant's suitability for the position, and complete academic transcripts (at this stage, unofficial copies are acceptable).

These materials should be sent electronically to Prof. Ian Rowlands at rowlands@uwaterloo.ca with 'PDF - [applicant name]' in the subject line. Specific questions about the PDF position may also be directed to Prof. Rowlands at this email address. Review of applications will begin on Friday, 12 February 2016, and will continue until the position is filled.

The School of Environment, Resources and Sustainability has been devoted to the pursuit of sustainability in a complex world for more than four decades. Its members aim to use transdisciplinary approaches to help protect, restore, reform and transform social and ecological systems (<https://uwaterloo.ca/environment-resources-and-sustainability/>).

The Sustainable Energy Policy Group offers a stimulating research environment - collaborative, interdisciplinary and working to apply advanced research techniques to address contemporary challenges and opportunities in sustainable energy policy (<https://uwaterloo.ca/sustainable-energy-policy/>).

The Faculty of Environment at the University of Waterloo is a world leader in interdisciplinary research and teaching on the environment and sustainability through its five academic units (<http://www.environment.uwaterloo.ca>).

The University of Waterloo, located at the heart of Canada's technology hub, is one of Canada's leading comprehensive universities with 35,000 full- and part-time students in undergraduate and graduate programs (<http://www.uwaterloo.ca>).

The University of Waterloo respects, appreciates and encourages diversity. We welcome applications from all qualified individuals including women, members of visible minorities, Aboriginal peoples and persons with disabilities. All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority.

While we appreciate all applications, only those with whom we wish to discuss the position further will be contacted.

Open Position for MSC or PHD Research on the Hybridization of Lifecycle Assessment and Economic Input-Output Analysis, at the CIRAIQ, Polytechnique Montreal, Canada

We are looking for a smart and self-reliant student for an ambitious and exciting research project in sustainability research. The student will have an opportunity to contribute to software development, and some programming skills are therefore required (preferably Python). Past experience with handling large datasets or databases is also an advantage. A long-term interest in lifecycle assessment (LCA) or input-output analysis (IOA) is of course sought, but past experience with these tools is not strictly necessary.

THE CONTEXT:

Two complementary approaches exist to calculate the direct and indirect environmental impacts caused by the production and consumption of a given product (e.g., an electric car): an "engineering" perspective with LCA, and a "macroeconomic" perspective with IOA. While LCA offers detailed physical descriptions, it can never completely describe the whole system. On the contrary, IOA describes the entire economy and all indirect transactions linked to a given consumption, but it does so in a highly aggregated manner and with monetary data. The best analyses combine these two perspectives, complementing the detail of LCA with the completeness of IOA. However, such hybrid analyses are complicated by the fact that LCA and IO analyses are highly data-intensive and rely on completely different databases.

THE PROJECT:

This research will focus on the integration of LCA and IOA databases, which will allow for more complete, efficient, and consistent hybrid analyses. This is a unique opportunity to throw down one of the main obstacles to best practice in sustainability research! This project has excellent potential to lead to multiple publications in scientific journals.

APPLICATION:

This research will be co-supervised and financially supported by Prof. Réjean Samson and Prof. Manuele Margni, with some direct supervision by Dr. Guillaume Majeau-Bettez. A relevant bachelor or masters is required (natural science, economics, or computer science). Please send CV, letter of intention, and transcript of record to guillaume.majeau-bettez@polymtl.ca

The Ninth Biennial Conference of the International Society for Industrial Ecology, hosted by DePaul University, Illinois Institute of Technology, Northwestern University, and the University of Illinois at Chicago (UIC) will be held in Chicago, USA June 25-29, 2017. The venue is the Forum on the UIC campus. Watch for the posting of the conference website and release of the Call for Abstracts upcoming in October.

The 13th Industrial Symbiosis Research Symposium (ISRS) will be held at Devens Eco Industrial Park, Devens Hilton Garden Inn on June 17-18, 2016, just prior to the Gordon Conference in Stowe, Vermont, about a three hour drive from Devens, Massachusetts.

Save the Dates and consider joining the ISRS before you attend the Gordon Conference. A discounted room rate has been secured at the conference venue, Devens Hilton Garden Inn.

The ISIE newsletter is published four times a year. The aim of the newsletter is to keep our members informed about the latest and greatest ISIE news from around the globe. We can only do it with your help! Please send us any information you think is worth including in the newsletter (conference summary, important publications, job posting, new appointments, etc.) to Vered Blass, isienewsletter@gmail.com

